

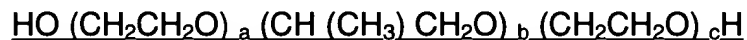
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A composition comprising stabilized particles comprising a complex of at least one cationic transfection agent and a nucleic acid, and at least one nonionic surface-active agent, wherein said agent stabilizes the size of said particles to less than or equal to 160 nanometers;

and wherein the at least one nonionic surface-active agent is chosen from

(a) a polyoxyalkylene of the formula:



wherein a, b, and c are, independently, a number from 20 to 100, and

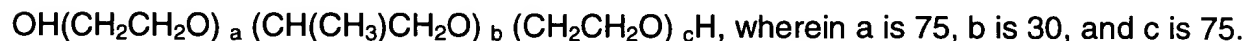
(b) a polyethylene glycol comprising a dendritic benzyl polyether head.

2. (Previously Presented) The composition according to claim 1, wherein the at least one cationic transfection agent and the nucleic acid are present in a charge ratio of between 1 and 6.

3. (Previously Presented) The composition according to claim 2, wherein the at least one cationic transfection agent and the nucleic acid are present therein in a charge ratio of less than 4.

Claims 4-7 (Canceled)

8. (Currently Amended) The composition according to claim 7 1, wherein the at least one non-ionic surface-active agent is a compound of the formula:



Claims 9-11 (Canceled)

12. (Previously Presented) The composition according to claim 1, wherein the at least one non-ionic surface-active agent is present at a concentration ranging from 0.01% to 10% weight/volume of said composition.

13. (Previously Presented) The composition according to claim 12, wherein the at least one non-ionic surface active agent is present at a concentration ranging from 0.02% to 5% weight/volume of said composition.

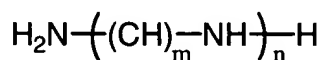
14. (Previously Presented) The composition according to claim 1, wherein the cationic transfection agent is a lipofectant.

15. (Previously Presented) The composition according to claim 14, wherein the lipofectant is an amphiphilic molecule comprising at least one lipophilic region and a hydrophilic region.

16. (Previously Presented) The composition according to claim 14, wherein the composition is a lipid mixture comprising cationic liposomes.

17. (Previously Presented) The composition according to claim 14, wherein the lipofectant is a cationic lipid.

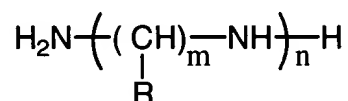
18. (Previously Presented) The composition according to claim 14, wherein the lipofectant comprises at least one polyamine region of the formula:



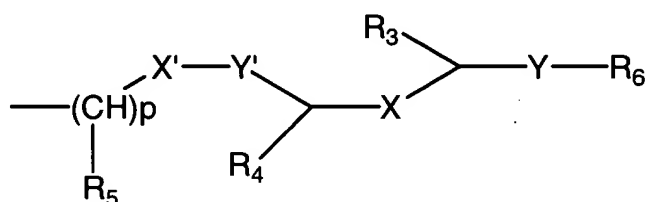
wherein m is a number greater than or equal to 2 and n is a number greater than or equal to 1, wherein when n is greater than 1, m is independently a number greater than or equal to 2, and wherein said polyamine region is covalently bonded to a lipophilic region of a saturated or unsaturated hydrocarbon chain of cholesterol type, or a natural or synthetic lipid capable of forming lamellar or hexagonal phases.

19. (Previously Presented) The composition according to claim 18, wherein the polyamine region is spermine or an analogue thereof that binds nucleic acid.

20. (Previously Presented) The composition according to claim 14, wherein the lipofectant is of the formula:



wherein R is a lipophilic region represented by the formula:



wherein X and X' are, independently of each other, an oxygen atom, a methylene group $-(\text{CH}_2)_q-$ wherein q is 0, 1, 2 or 3, or an amino group $-\text{NH}-$ or $-\text{NR}'$ wherein R' is a C₁ to C₄ alkyl group;

Y and Y' are, independently of each other, a methylene group, a carbonyl group or a group C=S;

R₃, R₄ and R₅ are, independently of each other, a hydrogen atom or a substituted or unsubstituted C₁ to C₄ alkyl radical;

p is a number from 0 to 5;

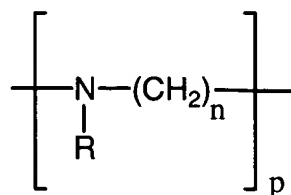
R₆ is a cholesterol derivative or an alkylamino group $-\text{NR}_1\text{R}_2$ wherein R₁ and R₂ are, independently of each other, a saturated or unsaturated C₁₂ to C₂₂ aliphatic radical, wherein said radical is linear or branched.

21. (Canceled)

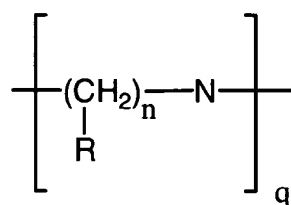
22. (Previously Presented) The composition according to claim 14, wherein the lipofectant is a cationic lipid comprising at least one guanidinium or amidinium group or a mixture thereof.

23. (Previously Presented) The composition according to claim 1, wherein the cationic transfection agent is a cationic polymer.

24. (Previously Presented) The composition according to claim 23, wherein said cationic polymer is a compound of the formula (I):



wherein R is a hydrogen atom or a group of formula:



wherein n is a number from 2 to 10, and p and q are numbers wherein the sum p+q is such that the average molecular weight of the polymer ranges from 100 to 10⁷ Da.

25. (Previously Presented) The composition according to claim 23, wherein said cationic polymer is a polyethylene imine having an average molecular weight of 50,000 Da (PEI50K), 22,000 Da (PEI22K), or 800,000 Da (PEI800K).

26. (Canceled)

27. (Previously Presented) The composition according to claim 1, wherein said nucleic acid is a deoxyribonucleic acid.

28. (Previously Presented) The composition according to claim 1, wherein said nucleic acid is a ribonucleic acid.

29. (Previously Presented) The composition according to claim 27, wherein the nucleic acid is chemically modified.

30. (Previously Presented) The composition according to claim 1, wherein said nucleic acid is an antisense nucleic acid.

31. (Previously Presented) The composition according to claim 1, wherein said nucleic acid comprises a therapeutic gene.

32. (Previously Presented) The composition according to claim 1, further comprising an adjuvant selected from the group consisting of dioleoylphosphatidylethanolamine (DOPE), oleoylpalmitoylphosphatidylethanolamine (POPE), di-stearoyl, -palmitoyl, and -myristoyl phosphatidylethanolamines optionally substituted with 1 to 3 N-methyl groups, phosphatidylglycerols, diacylglycerols, glycosyldiacylglycerols, cerebroside, sphingolipids and asialogangliosides.

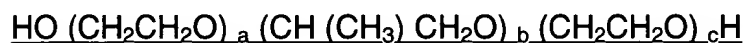
33. (Previously Presented) The composition according to claim 1, further comprising a targeting element.

34. (Previously Presented) The composition according to claim 33, wherein said targeting element is an antibody directed against a cell surface molecule; a membrane receptor ligand selected from the group consisting of insulin, transferrin, folic acid and a growth factor; cytokines; vitamins; lectins; proteins with an RGD unit; peptides containing a tandem array of RGD units wherein said peptides are linear or cyclic; polylysine peptides; natural ligand peptides; and synthetic ligand peptides.

35. (Currently Amended) A process for making the composition according to claim 1, comprising forming particles by bringing at least one transfecting agent and a nucleic acid into contact in the presence of a sufficient quantity of at least one nonionic surface-active agent to stabilize the particles formed at a size of less than about 160 nm;

and wherein the at least one nonionic surface-active agent is chosen from

(a) a polyoxyalkylene of the formula:



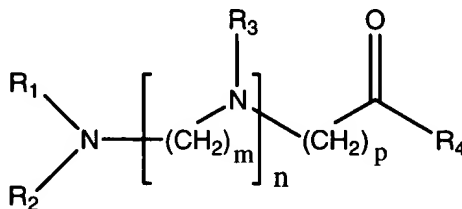
wherein a, b, and c are, independently, a number from 20 to 100, and

(b) a polyethylene glycol comprising a dendritic benzyl polyether head.

36. (Previously Presented) The process according to claim 35, wherein the nucleic acid or the at least one transfecting agent is mixed before said contact with the at least one nonionic surface-active agent.

37. (Canceled)

38. (Previously Presented) The composition according to claim 14, wherein the lipofectant is of the formula:



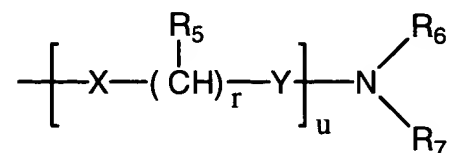
wherein

R₁, R₂ and R₃ are, independently of each other, a hydrogen atom or a group -(CH₂)_q-NRR', wherein each q is, independently, 1, 2, 3, 4, 5 or 6, and each R and R' is,

independently of each other, a hydrogen atom or a group $-(CH_2)_{q'}-NH_2$, wherein q' is independently, 1, 2, 3, 4, 5 or 6;

m , n and p are, independently of each other, a number between 0 and 6, wherein when n is greater than 1, each m is capable of taking different values and each R_3 is capable of having different meanings within their respective definitions;

R_4 represents a group of formula:



wherein R_6 and R_7 are, independently of each other, a hydrogen atom or a saturated or unsaturated C_{10} to C_{22} aliphatic radical, with the proviso that R_6 and R_7 are not both hydrogen atoms;

u is a number from 0 to 10, wherein when u is greater than 1, R_5 , X , Y and r are capable of having different meanings within the different units;

X is oxygen, sulphur, or an amine group which is monoalkylated;

Y is a carbonyl group or a methylene group;

R_5 is hydrogen or a natural amino acid side chain which is optionally substituted;

and

r is a number from 1 to 10, wherein when r is equal to 1, R_5 is a substituted or unsubstituted natural amino acid side chain, and when r is greater than 1, R_5 is hydrogen.

39. (Previously Presented) The composition according to claim 32, wherein the cerebroside is a galactocerebroside.

40. (Previously Presented) The composition according to claim 32, wherein the sphingolipid is a sphingomyelin.

41. (Previously Presented) The composition according to claim 1, wherein said cationic transfection agent is lipofectamine, dioctadecylamidoglycyl spermine (DOGS), palmitoylphosphatidylethanolamine 5-carboxyspermylamide (DPPES), 2,5-bis(3-aminopropylamino)pentyl(dioctadecylcarbamoylethoxy)acetate or 1,3-bis(3-aminopropylamino)-2-propyl (dioctadecylcarbamoylethoxy)acetate, $\{H_2N(CH_2)_3\}_2N(CH_2)_4N\{(CH_2)_3NH_2\}(CH_2)_3NHCH_2COGlyN[(CH_2)_{17}CH_3]_2$, $H_2N(CH_2)_3NH(CH_2)_4NH(CH_2)_3NHCH_2COGlyN[(CH_2)_{17}CH_3]_2$, or $H_2N(CH_2)_3NH(CH_2)_4NH(CH_2)_3NHCH_2COArgN[(CH_2)_{17}CH_3]_2$.

42. (Previously Presented) The process according to claim 36, wherein the at least one transfecting agent is a lipofectant.

Claims 43-45. (Canceled)

46. (Currently Amended) The process according to claim 45 35, wherein the at least one non-ionic surface-active agent is a compound of the formula:
 $OH(CH_2CH_2O)_a(CH(CH_3)CH_2O)_b(CH_2CH_2O)_cH$, wherein a is 75, b is 30, and c is 75.

Claims 47-49. (Canceled)

50. (Previously Presented) The process according to claim 35, wherein the at least one non-ionic surface-active agent is present at a concentration ranging from 0.01% to 10% weight/volume of said composition.

51. (Previously Presented) The process according to claim 50, wherein the surface active agent is present at a concentration ranging from 0.02% to 5% weight/volume of said composition.